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(54) R-Fe-B RARE EARTH PERMANENT MAGNET MATERIAL

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an R-Fe-B rare earth permanent magnet material, in which abnormal grains are grown less, even if an alloy is decreased in oxygen content by separating out ZrB compound, NbB compound, or HfB compound finely and uniformly in a magnet, so as to markedly expand its range of optimal sintering temperature.

SOLUTION: An RFeB magnet alloy is composed of 87.5 to 97.5 vol.% Fe<sub>14</sub>R<sub>2</sub>B<sub>1</sub> phase (wherein, R denotes at least a kind of rare earth element) and 0.1 to 3 vol.% rare earth or rare earth and oxide of transition metal. A compound selected out of a ZrB compound composed of Zr and B, an NbB compound composed of Nb and B, or an HfB compound composed of Hf and B as main components is contained in the metallic structure of the above alloy, and the compound grains are smaller than 5  $\mu$ m in average grain diameter and dispersed in the alloy at a maximum interval of 50  $\mu$ m or smaller.

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